SA-WM250

SERVICE MANUAL

Ver 1.0 2004.03



US Model Canadian Model AEP Model UK Model E Model

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, from 28-200~Hz; rated 100~watts, minimum RMS power, with no more than 0.8~% total harmonic distortion from 250~milliwatts to rated output.

System

Type Active Subwoofer (magnetically shielded design)

 $\begin{array}{lll} \mbox{Speaker unit} & \mbox{Woofer: 20 cm dia. (8 in.), cone type} \\ \mbox{RMS output} & \mbox{100 W (6 Ohms, 40 Hz, 10\% THD)} \\ \mbox{Frequency range} & \mbox{28 Hz} - 200 \mbox{ Hz} \end{array}$

 $\begin{array}{c} \mbox{High frequency cut-off frequency} \\ \mbox{50 Hz} - 200 \mbox{ Hz} \\ \mbox{Phase selector} & \mbox{NORMAL, REVERSE} \end{array}$

Inputs

Input jacks INPUT: input pin jack
SPEAKER IN: input terminals
Output jacks SPEAKER OUT: output terminals

General

Power consumption

Power requirements Taiwan models: 110 V AC, 50 Hz

USA and Canada models: 120 V AC, 60 Hz Other models: 230 V AC, 50/60 Hz

100 W

Dimensions Approx. $290 \times 355 \times 387 \text{ mm}$

 $(11 \ 3/8 \times 14 \times 15 \ 1/4 \ in.) \ (w/h/d)$ 11.5 kg (25 lb 6 oz)

Mass 11.5 kg (25 lb 6 c Supplied accessories Foot pads (4)

Audio connecting cord (1 phono – 1 phono),

2 m (6 ft 6 1/2 in.) (1)

Speaker cords, 2.5 m (8 ft 2 1/2 in.) (2)

Design and specifications are subject to change without notice.

ACTIVE SUBWOOFER

9-877-696-01 Sony Corporation
2004C04-1 Home Audio Company
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SAFETY CHECK-OUT

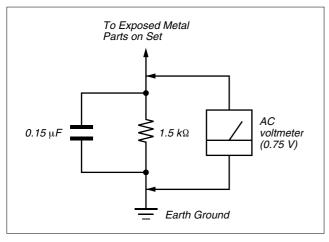
After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.

Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.). Leakage current can be measured by any one of three methods.

- 1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these
- A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate lowvoltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)



(Fig. A)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK riangle OR DOTTED LINE WITH MARK A ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the leadfree mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

| LEAD FREE MARK

Unleaded solder has the following characteristics.

• Unleaded solder melts at a temperature about 40°C higher than ordinary solder.

Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.

Soldering irons using a temperature regulator should be set to about 350°C.

Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!

- Strong viscosity
- Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

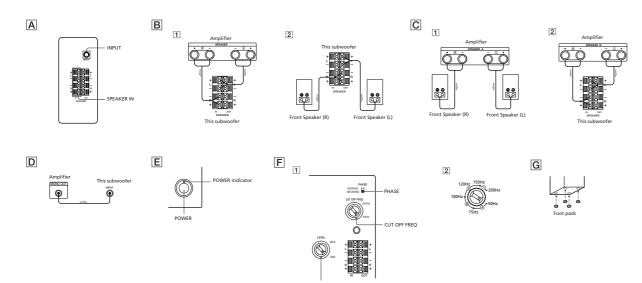
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

This section is extracted from instruction manual.

LOCATION OF CONTROL



Precautions

- On safety
 Before operating the subwoofer, be sure that the
- Before operating the subwoofer, be sure that the operating voltage of your subwoofer is identical with that of your local power supply.
 Unplug the subwoofer from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull the cord by grasping the plug. Never pull the cord itself.
- pull the cord itself.

 Should any liquid or solid object fall into the subwoofer, unplug the subwoofer and have the subwoofer checked by qualified personnel before operating it any further.

 AC power cord must be changed only at the qualified service shop.

When turning on or off an amplifier or other

Lower the volume of the amplifier to minimum

- To avoid damaging the subwoofer

 Be careful in setting the volume control of the amplifier to avoid an excessive input power.
- Do not attempt to open the enclosure or remold speaker units and networks.

In case color irregularity is observed on the nearby TV screen
With the magnetically shielded type of the speaker
system, the speakers can be installed near a TV set.
However, color irregularity may still be observed on the
TV screen depending on the type of your TV set.

- If color irregularity is observed... → Turn off the TV set once, then turn it on after 15 to 30 minutes.
- If color irregularity is observed again...

 → Place the speakers further apart from the TV set.

When howling occurs
Relocate the speaker or turn down the volume of the amplifier.

- Do not install the subwoofer near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical ubstration or shock. Good ventilation is essential to prevent internal heat build-up in the subwoofer. Place the subwoofer in a location with adequate air circulation. Do not place the
- subwoofer on a soft surface. Use caution when placing the speaker on a specially treated (waxed, oiled, polished, etc.) floor, as staining or discoloration may result.

On cleaning the cabinet

Clean the cabinet with a soft cloth lightly moistened with water. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

If you have any questions or problems concerning you subwoofer that is not covered in this manual, please consult your nearest Sony dealer.

Installation

Since the human ear cannot detect the direction and position where the bass sound being reproduced by a subwoofer (below 200 Hz) comes from, you can install the subwoofer wherever you like in your room. To obtain a better bass reproduction, we recommend you to install the subwoofer on a solid floor where the resonance is unlikely to occur.

- Notes

 Always install the subwoofer vertically, keeping a few centimeters away from the wall.

 Do not place an object on the subwoofer or sit on it.

 If the subwoofer is installed in the center of a room, the bass could be extremely weakened. This is due to the influence of the standing wave of the room. If this happens, move the subwoofer away from the center of a room or eliminate the cause of the standing wave, by installing a bookshelf on the wall, etc.

Hooking Up the System

Overview

- Jse the INPUT jacks or the SPEAKER IN terminals of the
 - se the INPUT jacks or the SPEAREN IN terminals blowcofer when you connect the amplifier. If your amplifier has one of the following types of output jacks, connect the INPUT jack and the amplifier's jack using the supplied audio connecti cord.
 - ord.

 MONO OUT jack

 MIX OUT jack

 SUBWOOFER output jack(s) SUPER WOOFER output jack(s)
 - If your amplifier does not have the above mentioned output jacks, connect the speaker terminals of the amplifier to the SPEAKER IN terminals instead. (A)

Before you get started

- Turn off the power of the amplifier and the subwoofer before making any connection. Use the audio connecting cords that are supplied to the respective equipment. If there are not enough audio connecting cords to make the necessary connections, you need to purchase some optional audio connecting cords.

 Be suge to make connecting.
- Be sure to make connections firmly to avoid noise
- . Connect the AC power cord from the subwoofer to a wall outlet.
- a wain outlet.

 You cannot connect the CENTER output jack for use with Dolby Pro Logic function to the subwoofer.

 Bass sound is not output with some Dolby Pro Logic

Connecting to an amplifier with a

single set of speaker terminals (E)
If your amplifier is equipped with a single set of speake
terminals, connect the subwoofer to the amplifier, and
then connect the front speakers to the subwoofer.

Hookups

- 1 Connect the subwoofer to the amplifier. Connect the SPEAKER IN terminals of the subwoofer to the amplifier's speaker terminals with the speaker cords. Be sure to connect the blood of the speaker cords. connect both L and R channels.
- 2 Connect the front speakers to the subwoofer Connect the speakers to the SPEAKER OUT terminals of the subwoofer.

Connecting to an amplifier with double (A+B) sets of speaker

terminals (C)

If your amplifier has double (A+B) sets of speaker terminals, connect both the subwoofer and the front speakers to the amplifier.

- Connect the front speakers to the amplifier. Connect the speakers to your amplifier's SPEAKER A terminals.
- 2 Connect the subwoofer to the amplifier Connect the SPEAKER IN terminals of the subwoofer to the amplifier's SPEAKER B terminals using the supplied speaker cords.

When you are using SPEAKER A terminal (front speaker) only or when the power of the amplifier is turned off, turn down the volume or turn off the power of the subwoofer. Otherwise, hum noise may be hear

Connecting to an amplifier with a

special jack for a subwoofer

If your amplifier has a special jack for a subwoofer (such as MONO OUT jack, MIX OUT jack, SUBWOOFER jack or SUPER WOOFER jack), connect the INPUT jack of the subwoofer to one of those jacks.

Hookups (D) Connect the MONO OUT jack of your amplifier to the INPUT jack of the subwoofer with the supplied audio

If the output level of your amplifier is not large enough

- Connecting the AC power cord

 Connect the AC power cord from the subwood
- Connect the AC power cord from the subwoofer and from your amplifier to a wall outlet.

 Make sure that power to the subwoofer is turned off before you plug in or unplug any power cord.

Listening to the Sound (E)

- 1 Turn on the amplifier and select the program
- 3 Play the program source. Adjust the VOLUME so that sound from the

front speakers is not distorted.

If it is distorted, the sound from the subwoofer will also be distorted.

- Never set the amplifier's tone control (BASS, TREBLE. Never set the ariphine's tone control (bASS, TREBLE etc.) or the equalizer output to a high level or input sinewaves of 20 Hz to 50 Hz recorded on a commercially-available test disc or special sound (bas sound of electronic musical instrument, pop noise of analog disc turntable, sound with abnormally analog disc turntable, sound with abnormally enhanced bass, etc.) in a high level to this unit. These actions may cause damage to the speakers. When a special disc containing abnormally enhanced bass is played, noise may be output in addition to the original sound. In such a case, reduce the sound level. The subwoofer output signal (DOLEY digital signal) of the digital surround processor sold singularly is set 10 dB higher by Dolby laboratories Licensing Corporation. In the case of using normally, adjust the subwooffer level.

Adjusting the Sound (F)

You can adjust the sound of the subwoofer to suit the

- Adjust the cut-off frequency.
- Turn the CUT OFF FREQ control, depending on the reproduction frequencies of your front
- Refer to the following when adjusting. ① Typical very small sized speakers: 5 - 7 cm
- ② Typical small sized speakers: 8 –15 cm dia.
- 3 Typical medium sized speakers: 16 -24 cm 4 Typical large sized speakers: more than 25
- To make the most of the low level converter function of Dolby digital, turn the CUT OFF FREQ as high as possible when playing back the Dolby digital.
- Adjust the volume level of the subwoofer. Turn the LEVEL control so that you can hear the bass sound a little more than before. To increase the volume, turn the LEVEL control clockwise. To reduce the volume, turn the LEVEL control counterclockwise.
- 3 Play your favorite song and movie. Male vocal tunes and voice containing bass sounds are most suitable for adjustment. Turn the volume for front speakers to the same level as usual.
- 4 Select the phase polarity. Use the PHASE selector to select the phase polarity.
- 5 Repeat steps 1 to 4 to adjust for your Once you have adjusted the subwoofer to the Once you have adjusted the subwoofer to the settings you want, use the VOLUME control on the amplifier to adjust the volume of the subwoofer with that of the other speakers. You don't need to adjust the subwoofer settings when you change the volume level of the amplifier.

- Notes

 If the sound distorts when you turn on the bass reinforcement from your amplifier (such as, DBFB, GROOVE, the graphic equalizer, etc.), turn off the bass reinforcement and adjust the sound.

 Do not turn the volume of the subwoofer to maximum. Doing so may weaken the bass sound. Moreover, extraneous noise may be heard.

 Selecting NORMAL or REVERSE with the PHASE selector reverses the polarity and may provide better bass reproduction in certain listening environments (depending on the type of front speakers, the position of the subwoofer and the adjustment of the cut-off frequency). It may also change the expanse and tightness of sound, and effect the feeling of the sound field. Select the setting that provides the sound you prefer when listening in your normal listening position.

Setting the speaker (G)

revent speaker vibration or movement while ning, attach the supplied foot pads to the speaker.

SECTION 2 DIAGRAMS

2-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING **BOARDS AND SCHEMATIC DIAGRAMS.** (In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu \mu F$ 50 WV or less are not indicated except for electrolytics and tantalums
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- _____: panel designation.

Note: Les composants identifiés par

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part

pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

une marque A sont critiques

- number specified. : B+ Line --- : B- Line.
- Voltages are dc with respect to ground under no-signal (detuned) conditions. no mark: Power on
- Voltages are taken with a VOM (Input impedance 10 $M\Omega$). Voltage variations may be noted due to normal production tolerances
- Signal path. ⇒ : AUDIO

Abbreviation CND: Canadian model. MY : Malaysia model. : Singapore model TW: Taiwan model.

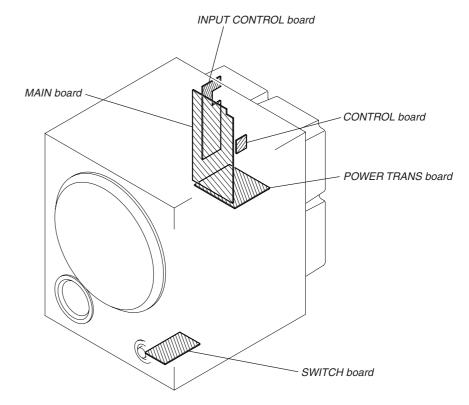
For printed wiring boards.

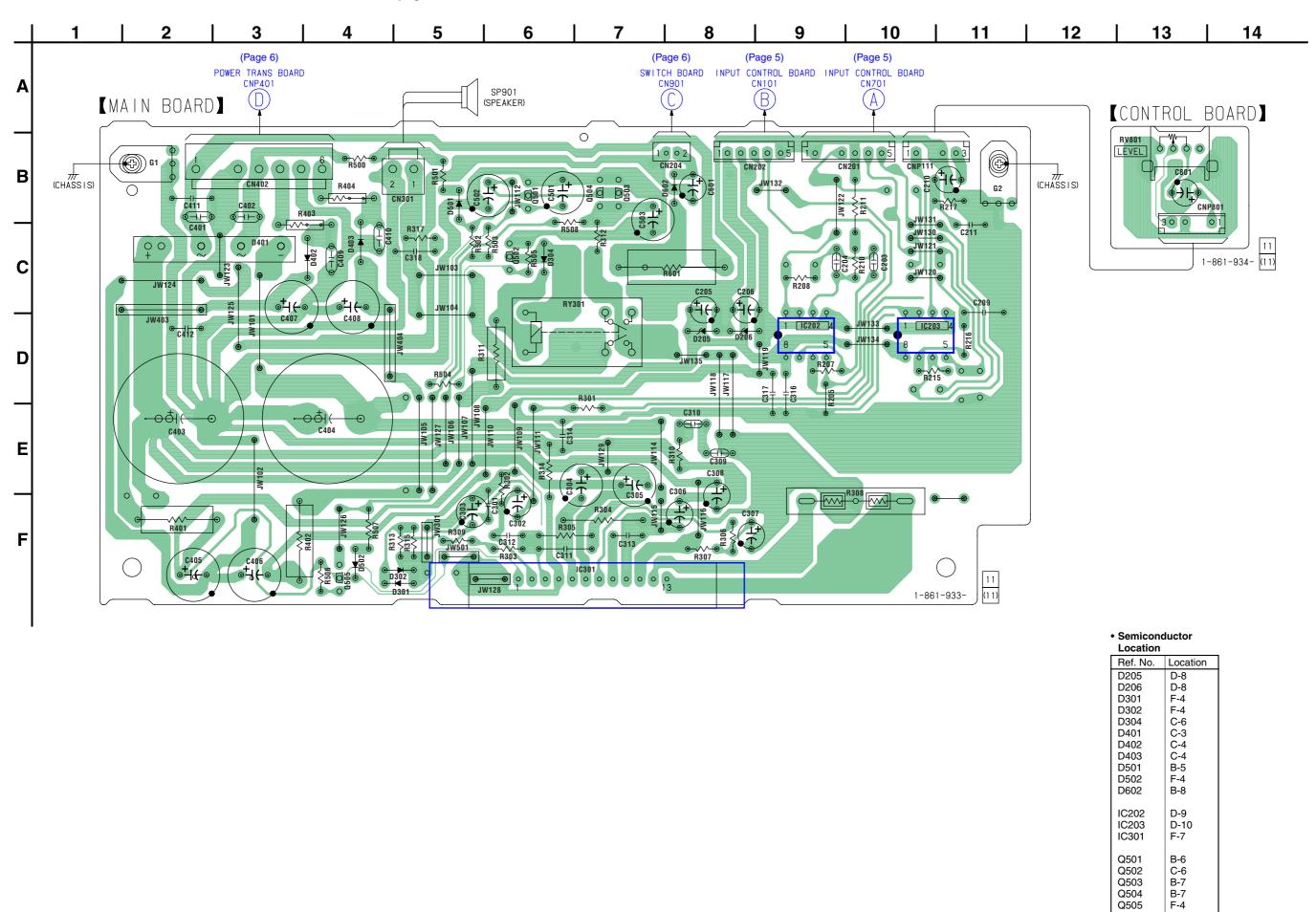
Note:

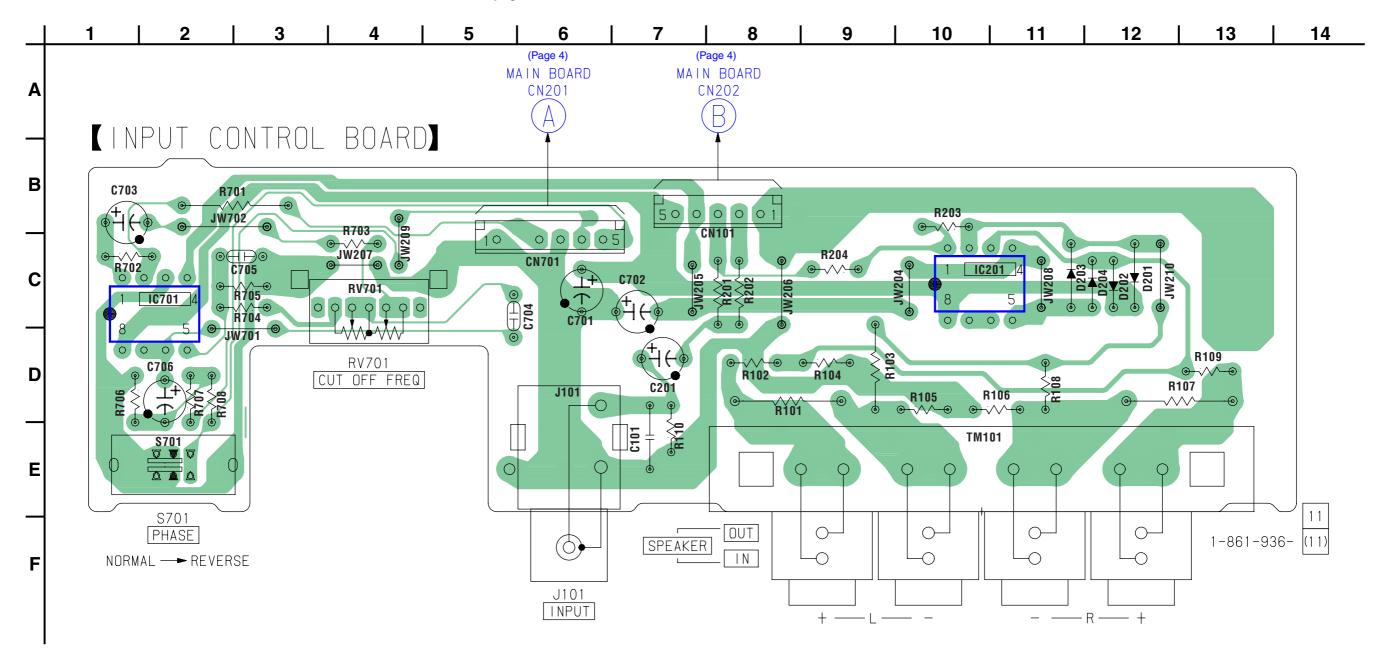
- : parts extracted from the component side.
- parts extracted from the conductor side.
- Pattern from the side which enables seeing.
- Abbreviation CND: Canadian model.

MY : Malaysia model. SP : Singapore model.

2-2. CIRCUIT BOARDS LOCATION

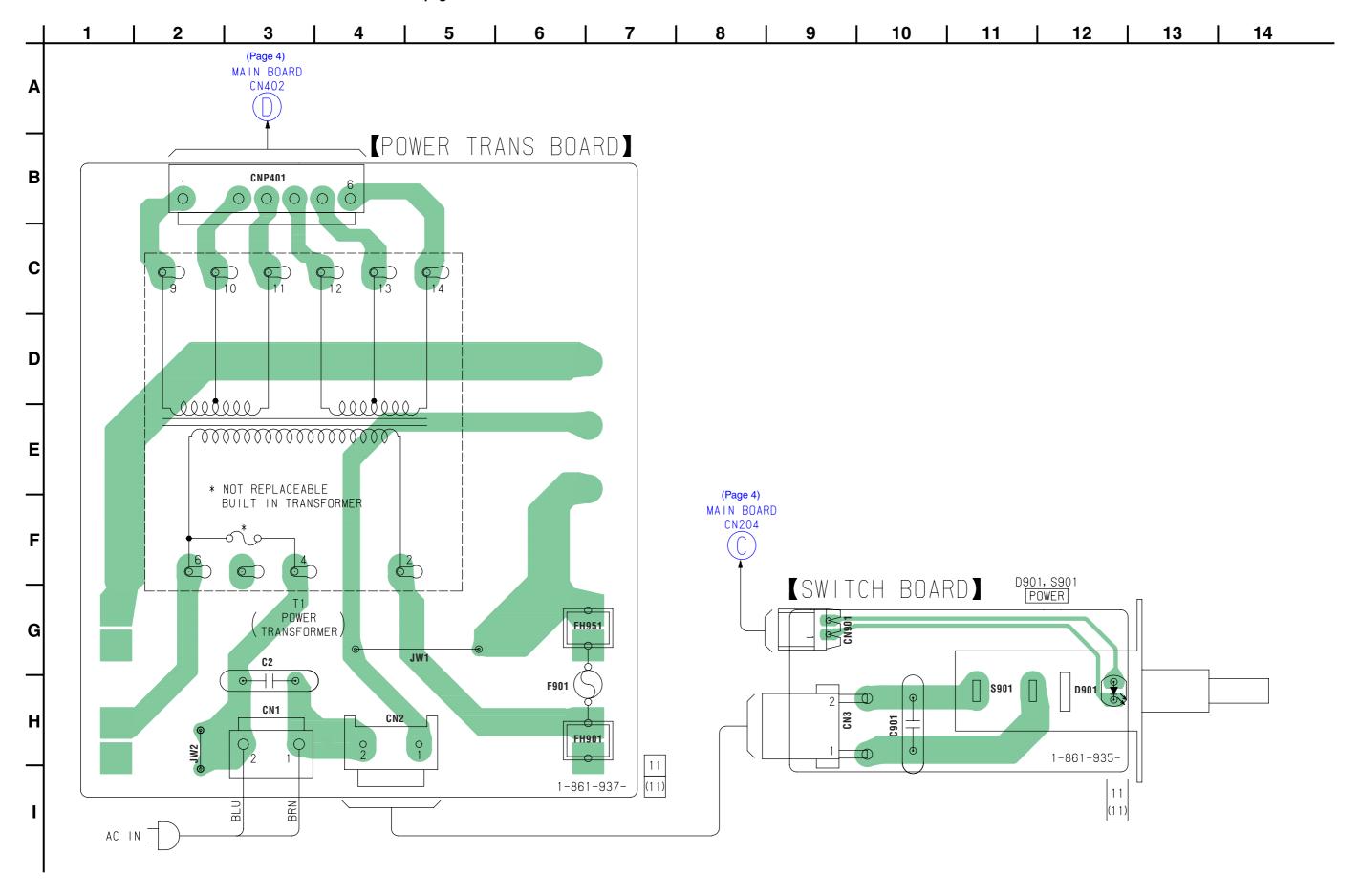




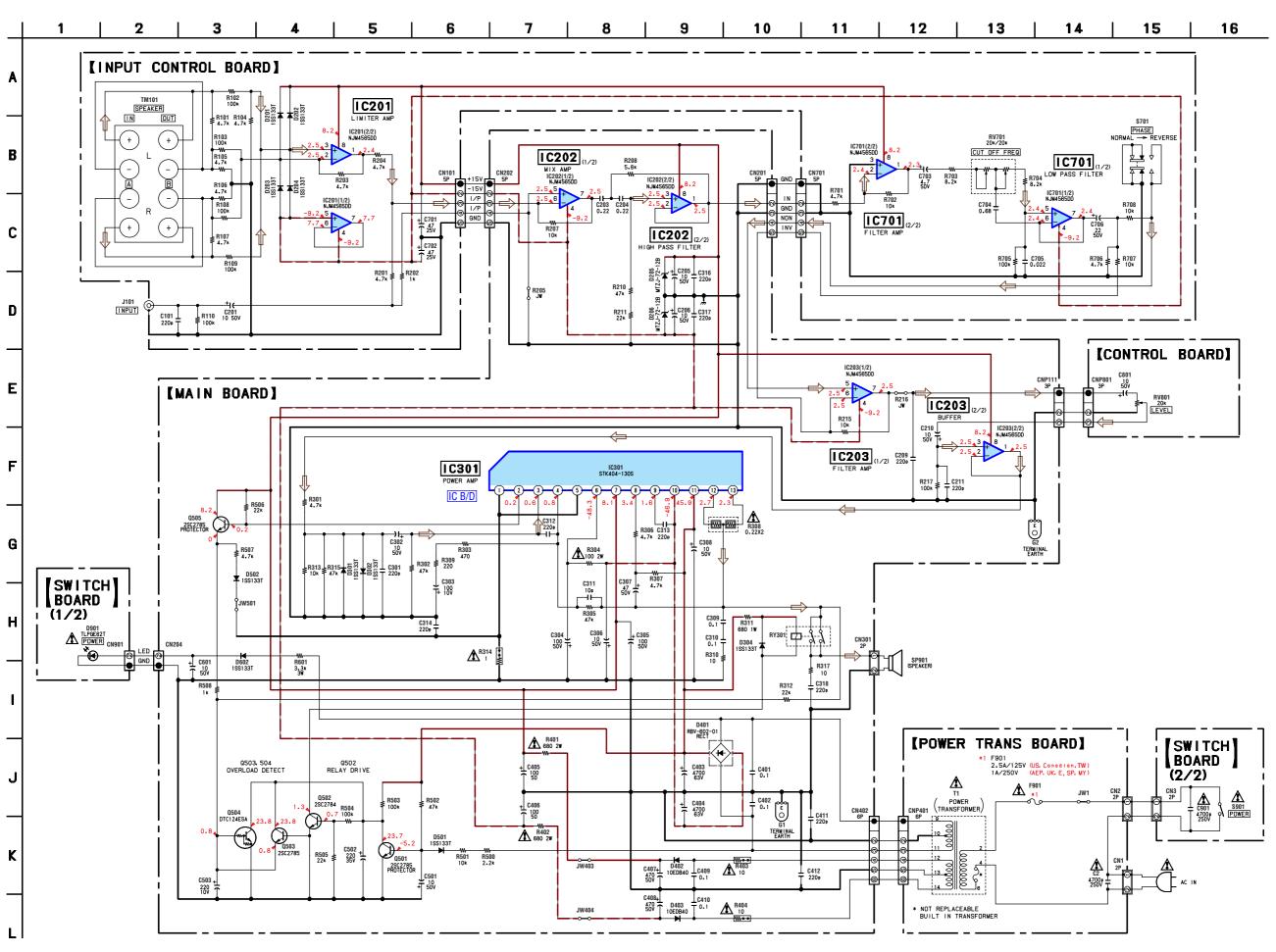


Semiconductor

Location	
Ref. No.	Location
D201	C-12
D202	C-12
D203	C-11
D204	C-12
IC201	C-10
IC701	C-2

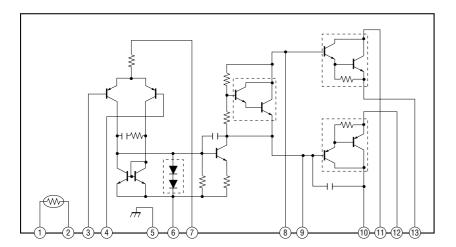


2-6. SCHEMATIC DIAGRAM — MAIN SECTION — • Refer to page 8 for IC Block Diagram.



2-7. IC BLOCK DIAGRAM

IC301 STK404-130S (MAIN Board)



SECTION 3 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

• Color Indication of Appearance Parts Example :

KNOB, BALANCE (WHITE) ... (RED)

† †
Parts Color Cabinet's Color

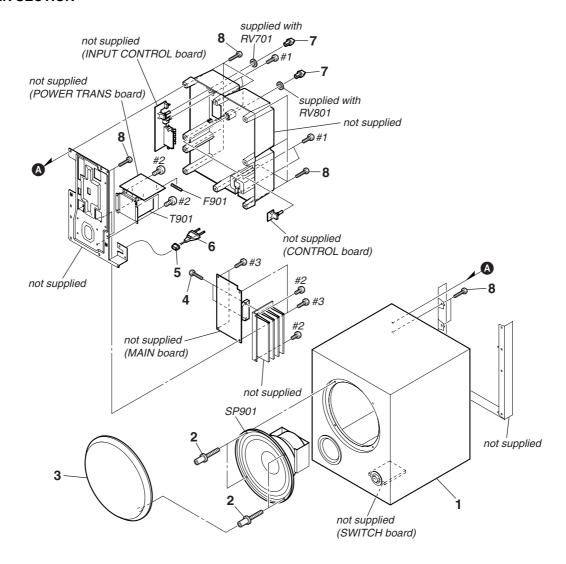
- Accessories are given in the last of this parts list.
- Abbreviation

CND : Canadian model MY : Malaysia model SP : Singapore model TW : Taiwan model The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

3-1. MAIN SECTION



Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
1	A-4713-812-A	SPEAKER CABINET ASSY (BLACK)	(BLACK)	8	4-235-677-01	SCREW (4X20) (TYPE1), +BVTP	
1	A-4715-636-A	SPEAKER CABINET ASSY (WOOD)((WOOD)	 ⚠ F901	1-532-463-51	FUSE (T1AL/250V) (AEP,UK,SP,MY)	
2	4-229-774-01	SCREW, TAPPING, HEXAGON SOCKE	T	 ▲ F901	1-533-450-12	FUSE, GLASS TUBE (DIA.5) (2.5A/12	25V)
3	4-253-174-01	GRILLE FRAME				(L	JS,CND,TW)
4	3-905-609-31	SCREW (TRANSISTOR)		SP901	1-825-004-13	SPEAKER (20cm) (WOOFER)	
				 ∆ T901	1-439-624-11	TRANSFORMER, POWER (AEP,UK,S	P,MY)
* 5	3-703-244-00	BUSHING (2104), CORD					
△ 6	1-769-744-11	CORD, POWER (AEP,UK,SP,MY)		 ∆ T901	1-439-625-11	TRANSFORMER, POWER (US,CND,T	W)
△ 6	1-783-820-11	CORD, POWER (US,CND)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
△ 6	1-827-597-41	CORD, POWER (TW)		#2	7-685-880-09	SCREW +BVTT 4X6 (S)	
7	4-999-482-81	KNOB (VOL)		#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	

CONTROL

SECTION 4 ELECTRICAL PARTS LIST

INPUT CONTROL

MAIN

NOTF:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
 All resistors are in ohms.
 METAL:Metal-film resistor.
 METAL OXIDE: Metal oxide-film resistor.
 F:nonflammable

When indicating parts by reference number, please include the board.

• Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• SEMICONDUCTORS In each case, $u : \mu$, for example: $uA.. : \mu A.. uPA.. : \mu PA..$

 $uPB..: \mu PB..\ uPC..: \mu PC..\ uPD..: \mu PD..$

• CAPACITORS uF: μF • COILS

uH: μH
• Abbreviation

CND : Canadian model TW: Taiwan model

MY: Malaysia model SP: Singapore model

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

			2	SP : 511	igapore mod	iei					
Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
		CONTROL BOARD	1				<u> </u>	< RESISTOR >			
		**********						< NESISTUN >			
						R101	1-260-107-11	CARBON	4.7K	5%	1/2W
		< CAPACITOR >				R102	1-247-879-11		100K	5%	1/4W
						R103	1-247-879-11		100K	5%	1/4W
C801	1-126-964-11	ELECT	10uF	20%	50V	R104	1-247-847-11		4.7K	5%	1/4W
						R105	1-247-847-11	CARBON	4.7K	5%	1/4W
		< CONNECTOR >									
						R106	1-247-847-11	CARBON	4.7K	5%	1/4W
CNP801	1-691-765-11	PLUG (MICRO CC	NNECTOR)	3P		R107	1-260-107-11	CARBON	4.7K	5%	1/2W
						R108	1-247-879-11	CARBON	100K	5%	1/4W
		< VARIABLE RESI	STOR >			R109	1-247-879-11		100K	5%	1/4W
						R110	1-247-879-11	CARBON	100K	5%	1/4W
RV801		RES, VAR, CARBO	,	,							
*******	**********	**********	*******	******	******	R201	1-247-847-11		4.7K	5%	1/4W
		INDUT CONTROL	DOADD			R202	1-247-831-11		1K	5%	1/4W
		INPUT CONTROL				R203	1-247-847-11		4.7K	5%	1/4W
		****	*****			R204 R701	1-247-847-11		4.7K 4.7K	5% 5%	1/4W 1/4W
		< CAPACITOR >				N/UI	1-247-847-11	CANDUN	4./ N	3%	1/4 VV
		COAFACITORS				R702	1-249-429-11	CARRON	10K	5%	1/4W
C101	1-128-813-11	CERAMIC	220PF	5%	50V	R703	1-249-428-11		8.2K	5%	1/4W
C201	1-126-964-11		10uF	20%	50V	R704	1-249-428-11		8.2K	5%	1/4W
C701	1-126-947-11		47uF	20%	35V	R705	1-247-879-11		100K	5%	1/4W
C702	1-126-947-11		47uF	20%	35V	R706	1-247-847-11		4.7K	5%	1/4W
C703	1-126-963-11		4.7uF	20%	50V					- / -	.,
						R707	1-249-429-11	CARBON	10K	5%	1/4W
C704	1-131-702-11	FILM	0.68uF	5%	50V	R708	1-249-429-11	CARBON	10K	5%	1/4W
C705	1-136-157-00	FILM	0.022uF	5%	50V						
C706	1-126-965-11	ELECT	22uF	20%	50V			< VARIABLE RES	ISTOR >		
		< CONNECTOR >				RV701	1-22/-365-11	RES, VAR, CARB	ON 20KX2 (CUT OFF	FREQ)
01101	1 770 170 11	OONNEOTOD (DE	D VII A) ED					CMITOLI			
CN101 CN701	1-779-179-11 1-784-931-11	CONNECTOR (B5) PIN, CONNECTOR						< SWITCH >			
GN701	1-704-931-11	FIIN, CONNECTOR	ו טר			S701	1_786_/100_11	SWITCH, SLIDE (DHVGE)		
		< DIODE >				0701	1-700-430-11	OWITOII, OLIDE ((I HAGE)		
		< DIODL >						< TERMINAL BOA	ARD >		
D201	8-719-991-33	DIODE 1SS133T	-77								
D202		DIODE 1SS133T				TM101	1-537-922-11	TERMINAL BOAR	RD (SPEAKE	R)	
D203	8-719-991-33	DIODE 1SS133T	-77			******	******	*********	******	*****	*****
D204	8-719-991-33	DIODE 1SS133T	-77								
								MAIN BOARD			
		< IC >						*******			
								0.5.6:			
IC201	8-759-636-74	IC M5218AP-22						< CAPACITOR >			
IC701	8-759-636-74	IC M5218AP-22				0000	1 101 000 11	CII NA	0.00	E0/	E0\/
		- IACK -				C203	1-131-696-11		0.22uF	5%	50V
		< JACK >				C204 C205	1-131-696-11 1-126-964-11		0.22uF 10uF	5% 20%	50V 50V
J101	1-815-025-11	JACK, PIN 1P (IN	PHT)			C206	1-126-964-11		10uF	20%	50V 50V
0101	1 010 020-11	onor, in ii (iiv	. 31)			C200	1-128-813-11		220PF	5%	50V 50V
						. 0203	1 120 010-11	OLITAINIO	22011	J /0	00 V

MAIN

										_		_
Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>			Remar	<u>rk</u>
C210	1-126-964-11	ELECT	10uF	20%	50V			< GROUND TE	RMINAL >			
C211	1-128-813-11	CERAMIC	220PF	5%	50V							
C301	1-128-813-11		220PF	5%	50V	G1		TERMINAL, GF				
C302	1-126-964-11		10uF	20%	50V	G2	1-537-738-21	TERMINAL, GF	ROUND			
C303	1-104-658-11	ELECT	100uF	20%	10V			10				
0004	1 100 000 11	FLEOT	100	000/	F0\/			< IC >				
C304	1-126-968-11		100uF	20%	50V	10000	0.750.000.74	10 ME040AD	00			
C305 C306	1-126-968-11 1-126-964-11	ELECT	100uF 10uF	20% 20%	50V 50V	IC202 IC203		IC M5218AP-IC M5218AP-				
C307	1-126-967-11		47uF	20%	50V 50V	IC301		IC STK404-13				
C308	1-126-964-11		10uF	20%	50V	10301	0-000-031-01	10 0111404-11	000			
0000	1 120 001 11	LLLOT	Tour	2070	001			< TRANSISTOI	3>			
C309	1-136-165-00	FILM	0.1uF	5%	50V				.,			
C310	1-136-165-00		0.1uF	5%	50V	Q501	8-729-119-78	TRANSISTOR	2SC2785-HF	Έ		
C311	1-162-199-31		10PF	5%	50V	Q502		TRANSISTOR				
C312	1-128-813-11	CERAMIC	220PF	5%	50V	Q503	8-729-119-78	TRANSISTOR	2SC2785-HF	Έ		
C313	1-128-813-11	CERAMIC	220PF	5%	50V	Q504		TRANSISTOR				
						Q505	8-729-119-78	TRANSISTOR	2SC2785-HF	Έ		
C314	1-128-813-11		220PF	5%	50V							
C316	1-128-813-11	CERAMIC	220PF	5%	50V			< RESISTOR >				
C317	1-128-813-11		220PF	5%	50V							
C318	1-128-813-11		220PF	5%	50V	R207	1-249-429-11	CARBON	10K	5%	1/4W	
C401	1-136-165-00	FILM	0.1uF	5%	50V	R208	1-249-426-11	CARBON	5.6K	5%	1/4W	
0.400	4 400 405 00	EU NA	0.4 5	5 0/	50)/	R210	1-247-871-11		47K	5%	1/4W	
C402	1-136-165-00		0.1uF	5%	50V	R211	1-247-863-11		22K	5%	1/4W	
C403 C404	1-104-482-11 1-104-482-11		4700uF 4700uF	20% 20%	63V	R215	1-249-429-11	CARBON	10K	5%	1/4W	
C404 C405	1-104-482-11		4700uF 100uF	20% 20%	63V 50V	D017	1 047 070 11	CARBON	100K	5%	1/4W	
C405			100uF 100uF	20%	50V 50V	R217	1-247-879-11 1-247-847-11		4.7K		1/4VV 1/4W	
U400	1-126-968-11	ELEGI	TOOUF	20%	307	R301 R302	1-247-871-11	CARBON	4.7K 47K	5% 5%	1/4VV 1/4W	
C407	1-126-971-11	ELECT	470uF	20%	50V	R303	1-247-671-11		47K 470	5% 5%	1/4VV 1/4W	
C407	1-126-971-11		470uF 470uF	20%	50V 50V	R304	1-249-413-11	METAL OXIDE	100	5%	2W	F
C408	1-136-165-00		0.1uF	20 % 5%	50V 50V	/ ∠!\\ N3U4	1-213-000-11	METAL OVIDE	100	J /0	Z V V	Г
C410	1-136-165-00		0.1uF	5%	50V	R305	1-247-871-11	CARBON	47K	5%	1/4W	
C411	1-128-813-11	CERAMIC	220PF	5%	50V	R306	1-247-847-11	CARBON	4.7K	5%	1/4W	
0411	1-120-013-11	OLITAWIO	22011	J /0	30 V	R307	1-247-847-11		4.7K	5%	1/4W	
C412	1-128-813-11	CERAMIC	220PF	5%	50V	 ≜ R308		ENCAPSULATE				
C501	1-126-964-11	ELECT	10uF	20%	50V	R309	1-249-409-11	CARBON	220	5%	1/4W	
C502	1-126-949-11		220uF	20%	35V	1.000	1 2 10 100 11	0,412011	220	0 70	.,	
C503	1-126-923-11		220uF	20%	10V	R310	1-249-393-11	CARBON	10	5%	1/4W	
C601	1-126-964-11		10uF	20%	50V	R311		METAL OXIDE	680	5%	1W	
						R312	1-247-863-11		22K	5%	1/4W	
		< CONNECTOR >				R313	1-249-429-11	CARBON	10K	5%	1/4W	
						 ⚠ R314	1-217-637-00	FUSIBLE	1	5%	1/4W	F
CN201	1-784-931-11	PIN, CONNECTOR	R 5P									
CN202		CONNECTOR (B5				R315	1-247-871-11	CARBON	47K	5%	1/4W	
* CN204	1-564-704-11	PIN, CONNECTOR				R317	1-249-393-11		10	5%	1/4W	
CN301						 ⚠ R401		METAL OXIDE	680	5%	2W	F
CN402	1-785-104-11	PIN, CONNECTOR	R (3.96mm	PITCH) 6	iΡ	 ⚠ R402		METAL OXIDE	680	5%	2W	F
		B				 ⚠ R403	1-219-153-11	FUSIBLE	10	5%	1/4W	F
CNP11	1 1-691-765-11	PLUG (MICRO CO	UNNECTOR) 3P			1 010 1=0 ::	FILOIB! F	40	5 0.		_
		DIODE				 A R404	1-219-153-11		10	5%	1/4W	F
		< DIODE >				R500	1-249-421-11		2.2K	5%	1/4W	
						R501	1-249-429-11		10K	5%	1/4W	
D205	8-719-110-31	DIODE RD12ES				R502	1-247-871-11		47K	5%	1/4W	
D206	8-719-110-31	DIODE RD12ES				R503	1-247-879-11	CARBON	100K	5%	1/4W	
D301	8-719-991-33					DEO4	1 047 070 44	CADDON	1001/	E0/	4 / 4\\ 4	
D302		DIODE 1881331				R504	1-247-879-11		100K	5%	1/4W	
D304	0-119-991-33	DIODE 1SS1331	1-//			R505	1-247-863-11		22K	5%	1/4W	
D401	Q_710 202 20	DIODE RBV-602	0_01			R506 R507	1-247-863-11 1-247-847-11		22K 4.7K	5% 5%	1/4W 1/4W	
D401 D402	6-500-522-11	DIODE RBV-602				R507	1-247-847-11		4.7K 1K	5% 5%	1/4VV 1/4W	
D402 D403	6-500-522-11					U000	1-241-031-11	UMINDUN	ın	J /0	1/ 4 VV	
D403 D501		DIODE 10EDB40					1-215-020-11	METAL OXIDE	3.3K	5%	3W	F
D501		DIODE 1331331				4511001	1-710-970-11	MILIAL OVIDE	0.01	J /0	344	'
שטטע	0 110-001-00	ומטומטו אמטומ						< RELAY >				
D602	8-719-991-33	DIODE 1SS1331	Γ-77					\ IILLAI /				
2002	0	21022 1001001				RY301	1-515-920-11	RELAY (24V)				
						1	********	` '	*****	*****	*****	***

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Replace only with part number specified.

Ne les remplacer que par une piéce portant le numéro spécifié.

SA-WM250

POWER TRANS

SWITCH

Ref. No.	<u>Part No.</u>	Description POWER TRANS BOAF		<u>Remark</u>	Ref. No.	Part No.	Description ACCESSORIES ************************************
	1-533-217-41	HOLDER, FUSE			<u> </u>	1-769-433-23	CORD, CONNECTION (CORD, SPEAKER (2.5n ADAPTOR, CONVERSION
₾C2	1-113-924-11	CERAMIC 0.0	0047uF 20%	250V		4-235-237-01	FOOT (BLACK/WOOD:A MANUAL, INSTRUCTIO
CM4	1 504 201 00	< CONNECTOR >	OC DITCH	OD.		4-252-451-21	MANUAL, INSTRUCTIO
CN1 * CN2 *****	1-580-230-11	PIN, CONNECTOR (3.9 PIN, CONNECTOR (PC)	C BOARD) 2P			4-252-451-31	MANUAL, INSTRUCTION
		SWITCH BOARD ********				4-252-451-41	MANUAL, INSTRUCTION
		< CAPACITOR >				4-252-451-51	MANUAL, INSTRUCTION
△ C901	1-113-924-11	CERAMIC 0.0 < CONNECTOR >	0047uF 20%	250V		4-981-864-01	FOOT (WOOD:SP,MY)
* CN3 CN901		PIN, CONNECTOR (3.1) PIN, CONNECTOR (SM					
		< DIODE >					
△ D901	6-500-991-01	LED TLPGE62T(SON	IY-M.F) (POWE	R)			
		< SWITCH >					
 \$901 *******		SWITCH, PUSH (AC F					
		MISCELLANEOUS ********					
⚠6 ⚠6 ⚠6 ⚠F901 ⚠F901	1-783-820-11 1-827-597-41 1-532-463-51	CORD, POWER (AEP, CORD, POWER (US,C CORD, POWER (TW) FUSE (T1AL/250V) (A FUSE, GLASS TUBE (I	ND) EP,UK,SP,MY) DIA.5) (2.5A/12	25V) JS,CND,TW)			
SP901 ⚠ T901 ⚠ T901 ******	1-439-624-11 1-439-625-11	SPEAKER (20cm) (WO TRANSFORMER, POW TRANSFORMER, POW	ver (Aép,uk,s ver (US,CND,1	ΓW)			

<u>).</u>	Part No.	<u>Description</u>	Remark
		ACCESSORIES **********	
	1-769-329-21 1-769-433-23 1-770-019-11 4-235-237-01 4-252-451-11	CORD, CONNECTION (PIN-PIN) (AUDI CORD, SPEAKER (2.5m) ADAPTOR, CONVERSION PLUG 3P (U FOOT (BLACK/WOOD:AEP,UK,TW) MANUAL, INSTRUCTION (ENGLISH.FF	K)
	7 202 401 11	SPANISH)	,
	4-252-451-21	MANUAL, INSTRUCTION (ENGLISH,FF GERMAN	RENCH, I,ITALIAN) (AEP,UK)
	4-252-451-31	MANUAL, INSTRUCTION (DUTCH,SPA SWEDISH	NISH, I,POLISH) (AEP)
	4-252-451-41	MANUAL, INSTRUCTION (PORTUGUED DANISH, FINNI	
	4-252-451-51	MANUAL, INSTRUCTION (ENGLISH,FF SPANISH,TRADITIONAL	REŃCH, ´
	4-981-864-01	FOOT (WOOD:SP,MY)	, , ,

<u>MEMO</u>

REVISION HISTORY

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1.0 2004.03 New	